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| EXAMINER |
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| HOLDER, ANNER N |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/816,320 | PAI ET AL. | |
| | Examiner | Art Unit | |
| | ANNER HOLDER | 2621 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10 March 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2,4-9,11-15 and 17-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-9,11-15 and 17-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 03/10/10 have been fully considered but they are not persuasive. As to Applicant's arguments regarding the Kim reference the Examiner respectfully disagrees. Regarding Applicant's argument concerning "comprises one or more bits, each of which are associated with a corresponding one or more motion vector registers, wherein the one or more bits are in a particular stat, based on whether the corresponding motion vector register stores a motion vector." Kim teaches the limitations as claimed. [col. 5 line 57- col. 6 lines 20; Abstract; Col. 1 Lines 44-57; Fig. 1; Fig. 4; Fig. 6; Col. 6 Lines 8-12; col. 5 line 57- col. 6 lines 20]

2. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Objections*

3. Claim 12 is objected to because of the following informalities: claim 12 is dependant upon claim 10 which has been cancelled. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 4, 8-9, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holcomb et al. US 2005/0105883 in view of Kato US 5,701,164.

6. As to claim 1, Holcomb teaches an input for receiving parameters, the parameters comprising a picture type indicator for indicating a type of a picture; [fig. 2; fig. 6; ¶ 0095 ¶ 0049] and logic for determining whether the parameters received by the input are valid, wherein the logic determines whether the parameters received by the input are valid based on the picture type indicator, whether the picture is progressive or interlaced. [fig. 6; ¶ 0095]

Holcomb does not explicitly the logic determines the number of motion vectors received by the input.

Kato teaches counting the number of motion vectors received by the input. [abstract; fig. 2; fig. 6; col. 19 line 48 col. 20 line 3; col. 20 lines 40-55; col. 23 lines 4-41]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kato with the device of Holcomb allowing for improved coding.

7. As to claim 4, Holcomb (modified by Kato) teaches a control register for providing the type of pictures and indicating the number of motion vectors received to the logic. [Holcomb - ¶ 0039; ¶0095; Kato - abstract; fig. 2; fig. 6; col. 19 line 48 col. 20 line 3; col. 20 lines 40-55; col. 23 lines 4-41]

8. As to claim 8, Holcomb teaches receiving parameters at a video decoder, the parameters comprising a picture type indicator for indicating a type of a picture [fig. 2; fig. 6; ¶ 0095 ¶ 0049] and determining the validity of the parameters, wherein the

determining whether the parameters received by the input are valid based on the picture type indicator, whether the picture is interlaced or progressive, whether the picture is frame predicted or field. [fig. 6; ¶ 0008; ¶ 0082; ¶ 0095-0096]

Holcomb does not explicitly the logic determines the number of motion vectors received by the input.

Kato teaches counting the number of motion vectors received by the input. [abstract; fig. 2; fig. 6; col. 19 line 48 col. 20 line 3; col. 20 lines 40-55; col. 23 lines 4-41]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kato with the device of Holcomb allowing for improved coding.

9. As to claim 11, Holcomb (modified by Kato) teaches determining the validity of the parameters further comprises determining that the parameters are invalid if the type of picture is an I-picture and any motion vectors are received. [Holcomb - fig. 2; fig. 6; ¶ 0095 ¶ 0049 Kato - abstract; fig. 2; fig. 6; col. 19 line 48 col. 20 line 3; col. 20 lines 40-55; col. 23 lines 4-41]

10. As to claim 12, Holcomb (modified by Kato) teaches determining the validity of the parameters further comprises determining that the parameters are invalid if the control register indicates that the type of picture is a B-picture and less than two of the one or more bits are in the particular state. [Holcomb - fig. 6; ¶ 0095; Kato - abstract; fig. 2; fig. 6; col. 19 line 48 col. 20 line 3; col. 20 lines 40-55; col. 23 lines 4-41]

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holcomb et al. US 2005/0105883 in view of Kato US 5,701,164 further in view of Drescher US 7,577,818 .

12. As to claims 2, Holcomb (modified by Kato) teaches the limitations of claim 1.

Holcomb (modified by Kato) does not explicitly teach an arithmetic logic unit for calculating one or more addresses depending on whether the logic determines that the addresses are valid.

Drescher teaches an arithmetic logic unit for calculating one or more addresses depending on whether the logic determines that the addresses are valid. [col. 1 lines 14-29]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the address calculation of Drescher with the device of Holcomb modified Kato allowing for optimized and efficient coding.

13. Claim 13-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holcomb et al. US 2005/0105883 in view of Kato US 5,701,164 further in view of Drescher US 7,577,818 .

14. As to claim 13, Holcomb teaches a video decoder for decoding macroblocks, said video decoder comprising: a processor for decoding a set of parameters, [fig. 3] a picture type parameter indicating a type of picture; [fig. 6; ¶ 0095] the logic determines whether the parameters received by the input are valid based on the picture type

indicator received by the input, [fig. 6; ¶ 0095] whether the picture is frame predicted, field predicted. [fig. 6; ¶ 0008; ¶ 0082; ¶ 0095-0096]

Holcomb does not explicitly teach calculating addresses associated with motion vectors if the set of parameters are valid; a video request manager for fetching reference pixels at the addresses calculated by the motion vector address computer, if the motion vector address computer determines that the set of parameters are valid, motion vectors indicating reference pixels associated with the macroblock and as to the logic determines whether the parameters received by the input are valid based on the picture type indicator whether the picture is frame predicted, field predicted, dual prime or 16x8 motion compensation and the number of motion vectors received by the input, motion vectors indicating reference pixels associated with the macroblock.

Kato teaches whether the picture is dual prime or 16x8 motion compensation [col. 31 lines 22-28; col. 32 lines 13-15, 40-42] counting the number of motion vectors received by the input. [abstract; fig. 2; fig. 6; col. 19 line 48 col. 20 line 3; col. 20 lines 40-55; col. 23 lines 4-41]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kato with the device of Holcomb allowing for improved coding.

Holcomb modified by Kato does not explicitly teach calculating addresses associated with motion vectors if the set of parameters are valid; a video request manager for fetching reference pixels at the addresses calculated by the motion vector address computer, if the motion vector address computer determines that the set of

parameters are valid, motion vectors indicating reference pixels associated with the macroblock and motion vectors indicating reference pixels associated with the macroblock.

Drescher teaches calculating addresses associated with motion vectors if the set of parameters are valid. [col. 1 lines 14-29]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the address calculation of Drescher with the device of Holcomb modified Kato allowing for optimized and efficient coding.

Holcomb (modified by Kato and Drescher) does not explicitly teach a video request manager for fetching reference pixels at the addresses calculated by the motion vector address computer, if the motion vector address computer determines that the set of parameters are valid.

Wise a video request manager for fetching reference pixels at the addresses calculated by the motion vector address computer, if the motion vector address computer determines that the set of parameters are valid. [Pg. 31 ¶ 0400; Pg. 163 ¶ 2587]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wise with the device of Holcomb (modified by Kato and Drescher) allowing for enhanced efficiency.

Holcomb (modified by Kato, Drescher and Wise) does not explicitly teach motion vectors indicating reference pixels associated with the macroblock.

Kim teaches motion vectors indicating reference pixels associated with the macroblock. [Col. 1 Lines 44-57]

It would have been obvious to one of ordinary one of ordinary skill in the art to combine the teachings of Kim with the coding device of Holcomb (modified by Kato, Drescher and Wise) allowing for reduction of errors in image reproduction and the improved speed of decoding.

15. As to claim 14, Holcomb (modified by Kato, Drescher, Wise and Kim) teaches an input for receiving parameters, the parameters comprising a picture type indicator for indicating a type of a picture; [Holcomb - fig. 6; ¶ 0095] and logic for determining whether the parameters received by the input are valid. [Holcomb - fig. 6; ¶ 0095]

16. As to claim 15, Holcomb (modified by Kato, Drescher, Wise and Kim) teaches an arithmetic logic unit for calculating one or more addresses depending on whether the logic determines that the addresses are valid. [Drescher - col. 1 lines 14-29]

17. As to claim 17, Holcomb (modified by Kato, Drescher, Wise and Kim) teaches a control register for providing the type of pictures [Holcomb - fig. 6; ¶ 0095] and indicating the number of motion vectors received to the logic. [Kato - abstract; fig. 2; fig. 6; col. 19 line 48 col. 20 line 3; col. 20 lines 40-55; col. 23 lines 4-41]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the address calculation of Drescher with the device of Holcomb modified Kato allowing for optimized and efficient coding.

18. Claim 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holcomb et al. US 2005/0105883 in view of Kato US 5,701,164 further in view of Wise et al. (Wise) US 2003/0156652 A1.

19. As to claim 9, Holcomb (modified by Kato) teaches the limitations of claim 8.

Holcomb (modified by Kato) does not explicitly teach fetching pixels from the one or more addresses.

Wise teaches fetching pixels from the one or more addresses. [Pg. 163 ¶ 2587]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wise with the device of Holcomb (modified by Kato) allowing for enhanced efficiency.

20. Claims 5-7 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holcomb et al. US 2005/0105883 in view of Kato US 5,701,164 in view of Wise et al. (Wise) US 2003/0156652 A1 further in view of Kim et al. (Kim) US 6,215,823 B1.

21. As to claim 5, Holcomb (modified by Kato) teaches the limitations of claim 4.

Holcomb (modified by Kato) does not explicitly teach one or more motion vector registers for storing motion vectors received by the input; control register comprises one or more bits, each of which are associated with a corresponding one or the one or more motion vector registers, wherein the one or more bits are in a particular state, based on whether the corresponding motion vector register stores a motion vector.

Wise teaches one or more motion vector registers for storing motion vectors received by the input; [Wise - Pg. 51 ¶ 0682 Table A.3.2]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wise with the device of Holcomb (modified by Kato) allowing for enhanced efficiency.

Holcomb (modified by Kato and Wise) does not explicitly teach the control register comprises one or more bits, each of which are associated with a corresponding one or the one or more motion vector registers, wherein the one or more bits are in a particular state, based on whether the corresponding motion vector register stores a motion vector.

Kim teaches the control register comprises one or more bits, each of which are associated with a corresponding one or the one or more motion vector registers, wherein the one or more bits are in a particular state, based on whether the corresponding motion vector register stores a motion vector. [Kim - Abstract; Col. 1 Lines 44-57; Fig. 1; Fig. 4; Fig. 6; Col. 6 Lines 8-12; col. 5 line 57- col. 6 lines 20]

It would have been obvious to one of ordinary skill in the art to combine the teachings of Kim with the coding device of Holcomb (modified by Kato and Wise) allowing for reduction of errors in image reproduction and the speed of decoding.

22. As to claim 6, Holcomb (modified by Kato, Wise and Kim) teaches the logic determines that the parameters are invalid if the control register indicates that the type of picture is an I-picture and any of the one or more bits are in the particular state. [Holcomb - fig. 6; ¶ 0095; Kato - abstract; fig. 2; fig. 6; col. 19 line 48 col. 20 line 3; col.

20 lines 40-55; col. 23 lines 4-41; Kim - Abstract; Col. 1 Lines 44-57; Fig. 1; Fig. 4; Fig. 6; Col. 6 Lines 8-12; col. 5 line 57- col. 6 lines 20; Abelard - col. 2 lines 50-56; col. 4 lines 25-34, 49-58]

23. As to claim 7, Holcomb (modified by Kato, Wise and Kim) teaches the logic determines that the parameters are invalid if the control register indicates that the type of picture is a B- picture and less than two of the one or more bits are in the particular state. [Holcomb - fig. 6; ¶ 0095; Kato - abstract; fig. 2; fig. 6; col. 19 line 48 col. 20 line 3; col. 20 lines 40-55; col. 23 lines 4-41; Col. 1 Lines 44-57; Fig. 1; Fig. 4; Fig. 6; Col. 6 Lines 8-12; col. 5 line 57- col. 6 lines 20; Abelard - col. 2 lines 50-56; col. 4 lines 25-34, 49-58]

24. As to claim 18, Holcomb (modified by Kato, Wise and Kim) teaches one or more motion vector registers for storing motion vectors received by the input; [Wise - Pg. 51 ¶ 0682 Table A.3.2] and wherein the control register comprises one or more bits, each of which are associated with a corresponding one or the one or more motion vector registers, wherein the one or more bits are in a particular state, based on whether the corresponding motion vector register stores a motion vector. [Kim - Abstract; Col. 1 Lines 44-57; Fig. 1; Fig. 4; Fig. 6; Col. 6 Lines 8-12; Kato - abstract; fig. 2; fig. 6; col. 19 line 48 col. 20 line 3; col. 20 lines 40-55; col. 23 lines 4-41]

25. As to claim 19, Holcomb (modified by Kato, Wise and Kim) teaches the logic determines that the parameters are invalid if the control register indicates that the type of picture is an I-picture and any of the one or more bits are in the particular state.

[Holcomb - fig. 6; ¶ 0095; Kim - Abstract; Col. 1 Lines 44-57; Fig. 1; Fig. 4; Fig. 6; Col. 6 Lines 8-12; Abelard - col. 2 lines 50-56; col. 4 lines 25-34, 49-58]

26. As to claim 20, Holcomb (modified by Kato, Wise and Kim) teaches the logic determines that the parameters are invalid if the control register indicates that the type of picture is a B-picture and less than two of the one or more bits are in the particular state. [Holcomb - fig. 6; ¶ 0095; Kim - Abstract; Col. 1 Lines 44-57; Fig. 1; Fig. 4; Fig. 6; Col. 6 Lines 8-12; Abelard - col. 2 lines 50-56; col. 4 lines 25-34, 49-58]

## *Conclusion*

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNER HOLDER whose telephone number is (571)270-1549. The examiner can normally be reached on M-W, M-W 8 am-3 pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anner Holder/
Examiner, Art Unit 2621

/Tung Vo/
Primary Examiner, Art Unit 2621